

THE SLOVENIAN SOCIETY FOR NON-DESTRUCTIVE TESTING

Aškerčeva 6, 1000 LJUBLJANA, SLOVENIA

IS ORGANISING

THE 8th INTERNATIONAL CONFERENCE OF
THE SLOVENIAN SOCIETY FOR NON-DESTRUCTIVE
TESTING

titled

**“APPLICATION OF CONTEMPORARY NON-
DESTRUCTIVE TESTING IN ENGINEERING”**

FIRST ANNOUNCEMENT
CALL FOR PAPERS

Venue of the conference: 1-3 September 2005
Portorož, Slovenia

SUBJECT OF THE CONFERENCE

- Applications of non-destructive methods for constructions testing;
- Control of materials and constructions with various non-destructive testing methods;
- Development of new methods for non-destructive testing of materials and constructions;
- Mathematical modeling in non-destructive testing;
- Computer aided methods for non-destructive examination of materials and constructions;
- Applications of various non-destructive methods for materials testing in manufacturing and operation;
- Automation of non-destructive testing of materials and products in mass production;
- Innovations in testing technique;
- Presentation of new methods and equipment for non-destructive testing of materials and constructions;
- Evaluation of indications, reliability estimations and estimation of defects acceptability;
- Training for non-destructive testing;
- Personnel qualification and certification for non-destructive testing;
- Facilities and equipment qualification and authorization of non-destructive testing;
- Standards and application of standards in the field of non-destructive testing.

PRESENTATION OF PAPERS

Authors willing to participate in the conference with their contribution referring to the above subjects should submit the title of the article, name of author(s) and name of the organization / institution and a short one page abstract, including the heading and keywords abstract as in the enclosed example until November 15th. 2005.

The abstract together with the announcement of participation should be sent to the address:

The Slovenian Society for Non-destructive Testing
Prof. Dr. Janez Grum
Aškerčeva 6
1000 Ljubljana, Slovenia
E-mail: janez.grum@f.uni-lj.si

IMPORTANT DATES:

The deadline for abstract submission	November 15 2004
Confirmation of paper/s acceptance,	January 15 2005
Submission of the paper/s	May 20 2005
Final announcement with detailed programme	June 30 2005
Conference	September 1-3 2005

CONFERENCE LANGUAGES: The official languages of the conference is English. Simultaneous interpretation will not be provided.

SOME GENERAL INFORMATION ABOUT SLOVENIA

LOCATION

Central Europe

AREA

20.251 km²

POPULATION

2 million

CAPITAL

Ljubljana pop. 330.000

LANGUAGE

Slovene

RELIGION

Mainly Roman Catholic

CURRENCY

Slovenian Tolar (SIT)

1 EUR is approximately
240 SIT



VENUE

The conference, round tables and exhibition of NDT equipment will be held in hotel METROPOL in Portorož, Slovenia.

Portorož is a pleasant resort with the Mediterranean climate in the north of the Adriatic Sea. In this period it is still nice, warm and suitable for walks. It offers various possibilities of recreation, swimming in the sea and several swimming pools. The place offers many kinds of entertainment and casinos. Detailed presentation of the place can be found on the website

<http://www.portoroz.si> and

<http://www.metropolgroup.si>.



Accompanying programme includes visiting famous sites such as caves of Postojna, Lipica horse breeding and the surroundings of Portorož.

TRANSPORT POSSIBILITIES:

The way to us is not long. There are good roads connecting us to the urban centres of Europe. We have our own airport and larger ones at Trieste and Ljubljana enable guests from all over the world to visit. You can also come by sea.

Portorož can also be reached by road from major central European cities of Munich, Milan, Vienna and Budapest in less than five hours.

The Slovenian railway is connected to the European rail network. Slovenia is served also by Eurocity and car trains.

CLIMATE: Slovenia has three different climatic regions: Central European, Alpine and Mediterranean, in Portorož you will find Mediterranean. The weather in Portorož in September is expected to be mild with average temperatures between 18 and 22°C.

INSPECTION OF TITANIUM TUBING USING ULTRASONIC LAMB WAVES GENERATED BY AN ELECTROMAGNETIC ACOUSTIC TRANSDUCER

A.C. Duncumb* and D. M. Keighley**

*TI Research, Hinxton, Saffron Walden, Essex, UK

**BNFL, Sellafield, Seascale, Cumbria, UK

Electromagnetic acoustic transducers (EMAT/s) are non-contacting devices and offer advantages in test situations where the use of conventional ultrasonic couplants is not possible. A familiar application is in the testing of hot products but more recently EMAT's are being considered for use in radioactive environments where it is often desirable to wrap up the test heat (to prevent it from becoming contaminated) to test long lengths of tube in one pass (to avoid excessive radiation dose uptake by the operator) and to avoid leaving behind traces of couplant. One such application is the in-service inspection of welded titanium tubing which has corroded by weld and heat affected zone (HAZ) attack.

An experimental test rig incorporating a horseshoe electromagnet was constructed, which allowed the feasibility of using ultrasonic Lamb waves to be studied for this purpose. Tests were carried out initially on a flat plate sample and then on welded tubes containing artificially introduced defects representative of HAZ attack.

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The artificial defects could be detected readily and in the tube sample could be distinguished from the weld itself. Tests on the flat plate sample with a compact prototype transducer based on a permanent magnet indicated that adequate field strength could be attained without the need for a bulky electromagnet. A prototype system for use on tube in plant is currently being constructed.

Simulated corrosion defects could be detected by s_0 and s_1 mode Lamb waves and could be distinguished from the weld by the difference in pulse transit time.

Generalized thinning of the tube wall could be detected only by the s_1 Lamb waves.

A "pulse-echo" mode of operation was successful which, it is thought, would facilitate operator training.

Keywords: Ultrasonic testing, Electromagnetic acoustic transducers, Lamb waves, Tube inspection.